

REMARKS

This responds to the Office Action mailed on April 16, 2008. Reconsideration is respectfully requested.

Claims 1, 2, 4, 11, 12, 17, 20, 22 and 24 are amended, claims 25 - 30 are canceled, and no claims are added; as a result, claims 1 - 24 are now pending in this application.

Allowable Subject Matter

Claims 11-16, 20, 21 and 24 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11, 12, 20 and 24 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims and are therefore believed to be in condition for allowance. Claims 13 - 16 are believed to be allowable at least because of their dependency on claim 12.

§112 Rejection of the Claims

Claim 26 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 26 has been cancelled.

§102 Rejection of the Claims

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Marchand (U.S. 4,220,954).

Claims 1 and 25 were also rejected under 35 U.S.C. § 102(e) as being anticipated by Bendov (U.S. 7,295,254).

Claim 1, as amended, is directed to circuitry that includes a four-port hybrid and switching circuitry. The four-port hybrid combines signals from a pair of antennas and to provide a sum signal and a difference signal. The switching circuitry selects between the sum signal and the difference signal based on a signal quality of the sum and difference signals. The hybrid comprises a reactive power divider associated with each of the ports. As further recited in claim

1, signal paths between the reactive power dividers comprise a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between the ports.

Applicant submits that neither Bendov nor Marchand disclose that signal paths between reactive power dividers within in the hybrid comprise a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between the ports.

In view of the amendment to claim 1, Applicant submits that the rejections of claim 1 under 35 U.S.C. § 102(b) and (e) have been overcome and that claim 1 is in condition for allowance. Claims 2 – 10 are believed to be allowable at least because of their dependency on claim 1.

§103 Rejection of the Claims

Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bendov.

Claims 3, 4 and 22 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Marchand.

Claim 1, as amended, is directed to circuitry that includes a four-port hybrid and switching circuitry. The four-port hybrid combines signals from a pair of antennas and to provide a sum signal and a difference signal. The switching circuitry selects between the sum signal and the difference signal based on a signal quality of the sum and difference signals. The hybrid comprises a reactive power divider associated with each of the ports. As further recited in claim 1, signal paths between the reactive power dividers comprise a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between the ports.

Claim 2, as amended, recites that the signal paths are compressed signal paths having a plurality of 90-degree bends therein to reduce spacing between the ports to less than the physical distance associated with the predetermined phase difference between the ports. Claim 3, among other things, recites that the reactive power-dividers associated with the first antenna port and the first switch port are spaced closer than a physical distance associated with the predetermined phase difference in a stripline medium. Claim 4 recites, among other things, that the signal paths

between the reactive power-dividers comprise a plurality of 90-degree bends to reduce a distance between the reactive power-dividers to less than a distance associated with the predetermined phase difference.

Applicant submits that neither Bendov nor Marchand disclose that signal paths between reactive power dividers within in hybrid comprise a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between the ports, wherein each port is associated with a reactive power divider, as recited in claim 1, and further defined and clarified in claim 2, 3 and/or 4.

In the rejection of claim 2, the Examiner states that compressed signal paths “if not inherent it would be obvious” to be included in the circuitry of Bendov. In the rejection of claims 3 and 4, the Examiner states that “if not inherent it would be obvious” for the circuitry of Marchand for the signal path between the reactive power dividers ... to reduce a distance to less than a distance associated with the predetermined phase difference for compact design of the circuitry.

Applicant respectfully disagrees with this and submits that it is neither obvious nor inherent to include a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between ports of a hybrid. The only requirement for a hybrid to function is to provide a predetermined phase difference between ports. A hybrid can be fabricated many different ways to provide the predetermined phase difference. For example, lumped elements, microstrip or stripline can be used. Furthermore, lumped elements may be used to provide a more compact design than microstrip or stripline signal paths. Therefore, it cannot be obvious or inherent from either Bendov or Marchand to provide compressed signal paths between the ports of a hybrid as recited in claim 1.

Thus, the Examiner has not established a prima facie case of inherency because the Examiner has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the references (see MPEP 2112 and Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)). The Office Action does not even assert that the allegedly inherent characteristic is necessary, let alone provide a basis in fact and/or technical reasoning. Applicant respectfully

submits that compressed signal paths between ports of the reactive power dividers, as recited in claim 1, does not necessarily flow from either Bendov or Marchand because there is nothing in either Bendov or Marchand to indicate that a compact design is desirable. Furthermore, there is nothing to indicate that Bendov or Marchand would not simply use lumped elements in a hybrid if a compact design would be desired. Marchand's antenna system operates at FM frequencies and is therefore likely to employ lumped elements. Bendov's system operates at television frequencies is therefore also likely to employ lumped elements. Applicant notes that there is no mention in either Bendov or Marchand as what their hybrid may comprise.

When a reference is silent about the asserted inherent characteristic, the gap in the reference may be filled with recourse to extrinsic evidence, but, such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill (*Continental Can Co. v. Monsanto Co.*, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991)). Applicant respectfully submits that the Examiner has not produced any evidence whatsoever to show that the "signal paths between the reactive power dividers comprise a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between the ports" recited in claim 1 is necessarily present in either Bendov or Marchand. As Applicant suggested above, there are many alternative ways to design a suitable hybrid.

In view of the above, Applicant submits that the rejection of claims 2, 3, 4 and 22 under 35 U.S.C. § 103(a) have been overcome.

Claims 5 and 23 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Bendov in view of Carey (U.S. 6,894,657). Although Carey discloses the use of stripline, the combination of Bendov and Carey fail to teach, suggest, or motivate "signal paths between the reactive power dividers comprise a plurality of bends to reduce a distance between the reactive power-dividers to less than a physical distance associated with a predetermined phase difference between the ports" as recited in claims 1 and 22. Claims 5 and 23 are therefore believed to be allowable at least based on the dependency on claim 1 or 22.

Claims 6, 17-19 and 27-30 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Bendov in view of Obuchi (U.S. 6,741,293). Applicant's claim 6 recites that

the switching circuitry further comprises logic circuitry to compare a packet error rate between the sum and difference signals and to select one of the signals which has a lower packet error rate. Obuchi, does not compare sum and difference signals, but selects analog TV reception when the packet error rate of the digital TV signals exceeds a predetermined number (see column 8 lines 21 – 30). Thus, there is no comparison whatsoever in Obuchi. Furthermore, there is no comparison between packet error rates of sum and difference signals. Obuchi does not even use sum and difference signals. Applicant's comparison of packet error rates of sum and difference signal provided improved reception through two antennas. This is not the case in Obuchi, which receives both digital and analog signals through a single antenna, and simply selects the analog signals when the reception of the digital signals is not sufficient. Accordingly, the rejection of claims 6 and 17 under 35 U.S.C. § 103(a) is believed to have been overcome. Claims 18 – 19 are believed to be allowable at least because of their dependency on claim 17. Claims 27 – 30 have been cancelled.

Claims 7-10 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Bendov in view of Obuchi and further in view of Peterson (U.S. 5,493,720). Claims 7 – 10 are believed to be allowable at least because of their dependency on claim 1, discussed above.

Claim 26 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Bendov in view of Marchand and Obuchi. Claim 26 has been cancelled.

RESERVATION OF RIGHTS

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record is relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence

of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

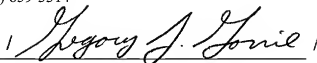
CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((480) 659-3314) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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